

THURSDAY, SEPTEMBER 1, 1881

THE BRITISH ASSOCIATION

THE Fifty-first Annual Meeting of the British Association was opened yesterday under the presidency of Sir John Lubbock, Bart., M.P., F.R.S., at York, the birthplace of the Association fifty years ago (September 27, 1831). Almost as easily might we compare the first meeting of the Accademia del Cimento when Roberval and Mersennus and Torricelli discussed the nature of the vacuum with the last meeting of the Nuovo Cimento, as compare the meeting of the British Association of 1831 with that of 1881. Railways, telegraphs, telephones, and electric lighting were unknown; the doctrines of evolution and the conservation of energy had not been developed; geology, palæontology, and petrology were in their infancy; the modern applications of spectroscopy were scarcely thought of; the mechanical equivalent of heat had not been determined. Several sciences, which at that time consisted of a mere collection of ill-arranged facts, have since, by the application of logical methods, had conferred upon them an individuality which they never before possessed. Science schools have arisen in all directions; the State yearly examines some thousands of its subjects; the Universities have created new professorships, have vitalised the old ones, and have placed science scholarships on an equality with those which formerly were only given for classics and mathematics. The Universities having opened their doors to the new culture, and it has become a necessary part of elementary education; while technical schools in all our large centres instruct thousands of artisans in the rudiments of natural knowledge. Has the British Association kept pace with this prodigious development?

What were the ideas of its founders? William Vernon Harcourt, "the lawgiver and proper founder of the British Association," said at the opening meeting that its objects should be "to give a stronger impulse and more systematic direction to scientific inquiry, to obtain a greater degree of national attention to the objects of science, and a removal of those disadvantages which impede its progress, and to promote the intercourse of the cultivators of science with one another and with foreign philosophers." By its reports, committees, recommendations, and grants, the Association has to some extent succeeded in each of these objects. But Mr. Vernon Harcourt planned the Association on a wider basis than that upon which it rests. "I propose to you," he said, "to found an association, including all the strength of Great Britain, which shall employ a short period of every year in pointing out the lines of direction in which the researches of science should move; in indicating the particulars which most immediately demand investigation; in stating problems to be solved and data to be fixed; in assigning to every class of mind a definite task; and suggesting to its members that there is here a shore of which the soundings should be more accurately taken, and there a line of coast along which a voyage of discovery should be made." We venture to think that this course of action might be more closely followed with advantage. It is true that a few committees are ap-

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pointed to report upon, and sometimes to experiment upon, certain defined objects, but if each section could give a list of the most important questions awaiting answer in its particular science—somewhat in the form of a modernised *Inquisitio de Naturâ Calidi*—energy would less often be expended about the mint, the anise, and the cumin, and more often applied to the weightier matters of the sciences. Men would then more frequently forge connections in the mighty chain, in place of separate links which sometimes rust away before a place is found for them.

The earlier presidents delighted to find in the Association the development of Bacon's idea of the "New Atlantis." But we venture with great deference to submit that it never has and never can approach the character of that academy of universal science. A nearer approach to it was to be found in the old Gresham College, and may now be met with in any one of the new colleges of sciences. Bacon's idea was to have a vast inclosure containing "elaboratories chymicall and phisicall," anatomical and metallurgical, observatories of every kind, botanical gardens, museums, and operatories for every science. Connected with these there was to be a staff of workers and a staff of thinkers; also a kind of scientific society, or collection of societies, in which the results should be discussed. There are a thousand workers in the domains of the sciences now where there was one fifty years ago; discoveries and inventions multiply, and scientific literature is assuming vast proportions; but at present we are as far from the lofty and majestic ideal of the New Atlantis as we were in 1831.

But let us not for a moment underrate the valuable work which the Association has accomplished. Many of the Reports of committees or individuals are classical, and the suggestions which they furnish have led to considerable results. Take one example: the establishment of magnetic observatories all over the world is mainly due to the action of the Association. "By no sudden impulse or accidental circumstance," said Prof. Phillips in the Birmingham presidential address in 1865, "rose to its high importance that great system of magnetic observations on which for more than a quarter of a century the British Association and the Royal Society, acting in concert, have been intent. First we had reports on the mathematical theory, and experimental researches of magnetism by Christie, 1833; Whewell, 1835; and Sabine, 1835. Afterwards a magnetic survey of the British Islands; then the establishment of a complete observatory at Dublin, with newly arranged instruments, by Dr. Lloyd in 1838. On all this gathered experience we founded a memorial to Her Majesty's Government, made a grant of 400*l.* from our funds for preliminary expenses, and presented to the meeting of this Association in Birmingham in 1839 a report of progress signed by Herschel and Lloyd. From that time how great the labour, how inestimable the fruits! Ross sails to the magnetic pole of the south; America and Russia co-operate with our observers at Kew, Toronto, and St. Helena; and General Sabine, by combining all this united labour, has the happiness of seeing results established of which no man dreamed—laws of harmonious variation affecting the magnetic elements of the globe, indefinite relation to the earth's

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movement, the position of the sun and moon, the distribution of temperature, and the situation in latitude and longitude."

We must bear in mind, however, that the great mass of members at any one meeting are not made up of scientific men who can appreciate the full development of a train of ideas or results, but of people who have not the advantages of attending the meetings of the London scientific societies, or of being *au courant* with scientific progress, and we may fitly inquire by what means their interests are best served. The President's address is perhaps the most powerful stimulus. Such addresses usually belong to one of three classes:—they are either distinguished by a fine display of oratory; or by the discussion of some leading theory concerning which the president has a right to speak *ex cathedra*; or they give a *résumé* of the scientific progress of the year. This last is of the greatest utility to the general run of members. Sometimes the three classes are judiciously combined, and these addresses are commonly the best of all. In former years the Presidential Address was very short, and chiefly discussed the results obtained by the Committees, and the Reports thereon. Occasionally an unscientific nobleman has opened the proceedings by a *quasi* after-dinner speech, while anon we have a sophistical declamation dealing with some of the burning questions of the hour, and disposing of them bravely.

Many cities have received the Association twice, but few three times. York will now be one of the latter, but it is thirty-six years since the last meeting was held there. Murchison called it the "cradle of the Association," and at the second York meeting the tickets bore the inscription, *Antiquam exquirite Matrem*. If the Association carries out the ideas of its founders, we may fairly hope that a centennial and even a millennial meeting will be held in the place of its birth. The city has many objects of interest: it possesses convenient accommodation for all the sections, and a number of important manufactories can be easily visited from it. The local committee have issued an extremely useful programme of their arrangements, which not only contains all the necessary information concerning trains, posts, lodgings, and the places of meeting, but also articles on the zoology, botany, and geology of the neighbourhood, and a description of the various excursions. An interesting article on "The York Founders of the Association" is contributed by Archdeacon Hey. An exhibition of art and industrial produce, and a collection of scientific apparatus, will be open during the week. Four excursions are organised for Saturday, September 3: to Scarborough; to Castle Howard; to Helmsley and Rievaulx; and to Brimham Rocks and Harrogate. On the following Thursday there will be seven excursions: to Bolton Abbey and the Strid; to Cleveland; a coast excursion; to Gristhorpe, Speeton, and Scarborough; to Whitby; to Wensleydale; and to Aldborough and Borough-bridge. Among the more important manufactories which will be visited are the telescope works of Messrs. Cooke and Sons, the workshops of the North Eastern Railway, the York glass works, and some extensive confectionery works. Naturalists will be glad to learn that the county possesses a fauna which comprises 513 out of the 717 British Vertebrata, viz. 46 mammals, 307 birds, 12 reptiles, and 148 fishes. It also furnishes 71 per cent. of the British flowering-plants and ferns. Geologically the county consists of rounded Chalk Hills, Oolite overlying the Lias, Trias covered with glacial drift and alluvial deposit, and a narrow band of Permian strata. Many opportunities will be afforded to members of studying the geology of the district.

The famous Kirkdale Cave, which was the first to be scientifically examined, gave rise to the Yorkshire Philosophical Society. The numerous remains found in it became the basis of a museum, and to it was attached the

scientific society of which John Phillips was one of the secretaries. The idea of the Association was broached by Brewster in a letter to Phillips. The Council of the Yorkshire Society issued the first invitations, and its president, vice-president, treasurer, and secretaries filled the same offices at the first meeting of the Association. The writer of an able article in the *Times* of last Friday points out that in place of the few philosophical societies of fifty years ago there are now a hundred or two scattered all over the country often doing good work, which is to a great extent lost or wasted because inaccessible to the scientific world, and he suggests that the Association should act as a bond of union between these societies, proposing methods of work and special kinds of research suitable to the particular district. This might surely be done with great advantage in the case of the natural history sciences and geology; and we think the idea is worthy the attention of the Association. If, furthermore, it could publish a *résumé* of the more important results obtained by the several local societies during each year, it would be a boon to scientific literature.

As might have been expected, the "Jubilee Meeting" of the Association is likely to attract an unusually large gathering. On Tuesday upwards of 1500 names had been enrolled. The special character of the meeting is likely to have an influence not only on the presidential addresses, but on the nature of the entire proceedings.

INAUGURAL ADDRESS BY SIR JOHN LUBBOCK, BART., M.P.,
F.R.S., D.C.L., LL.D., PRESIDENT

IN the name of the British Association, which for the time I very unworthily represent, I beg to tender to you, my Lord Mayor, and through you to the City of York, our cordial thanks for your hospitable invitation and hearty welcome.

We feel, indeed, that in coming to York we are coming home: gratefully as we acknowledge and much as we appreciate the kindness we have experienced elsewhere, and the friendly relations which exist between this Association and most—I might even say, all—our great cities, yet Sir R. Murchison truly observed at the close of our first meeting in 1831, that to York, "as the cradle of the Association, we shall ever look back with gratitude; and whether we meet hereafter on the banks of the Isis, the Cam, or the Forth, to this spot we shall still fondly revert." Indeed, it would have been a matter of much regret to all of us, if we had not been able on this, our fiftieth anniversary, to hold our meeting in our mother city.

My Lord Mayor, before going further, I must express my regret, especially when I call to mind the illustrious men who have preceded me in this chair, that it has not fallen to one of my eminent friends around me, to preside on this auspicious occasion. Conscious, however, as I am of my own deficiencies, I feel that I must not waste time in dwelling on them, more especially as in doing so I should but give them greater prominence. I will, therefore, only make one earnest appeal to your kind indulgence.

The connection of the British Association with the City of York does not depend merely on the fact that our first meeting was held here. It originated in a letter addressed by Sir D. Brewster to Prof. Phillips, as Secretary to your York Philosophical Society, by whom the idea was warmly taken up. The first meeting was held on September 26, 1831, the chair being taken by Lord Milton, who delivered an address, after which Mr. William Vernon Harcourt, Chairman of the Committee of Management, submitted to the meeting a code of rules which had been so maturely considered, and so wisely framed, that they have remained substantially the same down to the present day.

The constitution and objects of the Association were so ably described by Mr. Spottiswoode, at Dublin, and are so well known to you, that I will not dwell on them this evening. The excellent President of the Royal Society, in the same address, suggested that the past history of the Association would form an appropriate theme for the present meeting. The history of the Association, however, is really the history of science, and I long shrank from the attempt to give even a panoramic survey of a subject so vast and so difficult; nor should I have ventured to make any such attempt, but that I knew I could